First Steps Towards Exporting Education: Software Engineering Education Delivered Online to Professionals

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Key Takeaways

- We know more must be done
- Graduate degrees aren’t the (whole) answer
- Bringing education out to professionals may be the answer
Outline

1. Background
2. What we did
3. Results
4. Next Steps
5. Conclusion
More must be done

The need for something more is well-documented

- Barker and Inoue, 2009
More must be done

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- Skandan and Sidhardhan, 2009
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- Skandan and Sidhardhan, 2009
- Skevoulis, 2009
- Alef and Poirier, 2010
- Daun et al., 2014
More must be done

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- Alef and Poirier, 2010
- Daun et al., 2014

Graduate programs will not be enough

- Padmini and Shakila, 2009
- Bareiss and Mercier, 2010
Dilbert (well, Wally) says...

Figure: Dilbert Dec. 21, 1997 (abridged)
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Small, Synchronous “MOOC”

Small, private, online course (SPOC)

8-week distillation of graduate software design course

Synchronous webinar every week
Research Questions

R1. How might delivery by universities compare to delivery by other organizations (i.e., private training consultantcy firms, MOOCs, etc.)

R2. Should we provide that education directly to professionals?

R3. Can we provide software engineering education online successfully?
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Educational Background

What is your formal educational background in Computer Science and Software Engineering?

- Master’s 24%
- Bachelor’s 54%
- Less/None 22%
## Exported Education vs. Master’s Program

What is your level of interest in...

<table>
<thead>
<tr>
<th></th>
<th>Exported Education</th>
<th>Master’s Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Interest</td>
<td>12%</td>
<td>29%</td>
</tr>
<tr>
<td>Intend to enroll</td>
<td>53%</td>
<td>6%</td>
</tr>
<tr>
<td>Interested, but impractical</td>
<td>35%</td>
<td>65%</td>
</tr>
</tbody>
</table>
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Next Steps

What should we do next?

- Larger scale survey of interest
- Extension to direct supervisor and co-workers
- Pre-/Post-surveys
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We need more...RESEARCH!

Early success could mean significant benefits

Must compare to traditional corporate training-style delivery
Fin
MOOC

Tend to be fully asynchronous; may not be effective approach to this type of education

Much more difficult to justify its cost of creation if the topic is not general enough
Overall Rating of Course

<table>
<thead>
<tr>
<th>Classifier</th>
<th>Respondents %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outstanding</td>
<td>6%</td>
</tr>
<tr>
<td>Very good</td>
<td>65%</td>
</tr>
<tr>
<td>Good</td>
<td>29%</td>
</tr>
<tr>
<td>Average</td>
<td>5.76</td>
</tr>
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</table>
Valuable to Personal Development

<table>
<thead>
<tr>
<th>Classifier</th>
<th>Respondents %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>47%</td>
</tr>
<tr>
<td>Agree</td>
<td>53%</td>
</tr>
</tbody>
</table>
## Valuable to Business

<table>
<thead>
<tr>
<th>Classifier</th>
<th>Respondents %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>35%</td>
</tr>
<tr>
<td>Agree</td>
<td>59%</td>
</tr>
<tr>
<td>Disagree</td>
<td>6%</td>
</tr>
</tbody>
</table>
This course compared favorably with other training opportunities at my company

<table>
<thead>
<tr>
<th>Classifier</th>
<th>Respondents %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>29%</td>
</tr>
<tr>
<td>Agree</td>
<td>71%</td>
</tr>
</tbody>
</table>